

This Response addresses the issues raised by the Examiner in the Office Action mailed September 25, 2002. In view of the above amendments and the following remarks, Applicants believe that all outstanding issues have been addressed and prompt allowance of the remaining claims is respectfully requested.

I. Claim Rejections – 35 U.S.C. §112

The Examiner first rejected Claims 2, 16, 19, 28, 29, 31, 33-43 and 52 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Of those claims, Applicants have cancelled Claims 2, 16, 33-43 and 52, thus leaving only Claims 19, 28, 29 and 31 to be addressed with regard to the §112 rejections.

A. Claim 19

With regard to Claim 19, the Examiner objected to the phrase “water loving” as having insufficient antecedent basis in the claim. Applicants have replaced the phrase “water loving” with the term “hydrophilic.”

B. Claims 28, 29 and 31

With regard to Claims 28, 29 and 31, the Examiner indicated it was not clear which layer contained, respectively, the flow agent, the coating additive and the plasticizer. Each of these claims has been amended to indicate that the layer in which each of these items is found is the one or more ink receptive layer(s).

Therefore, in view of the foregoing amendments and the claims which have been cancelled, Applicants believe the Examiner’s concerns with respect to §112 have been properly addressed.

II. Claim Rejections – 35 U.S.C. §102

The Examiner next rejected Claims 1, 2, 18, 33, 34, 37, 41, 43, 47 and 48 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,660,928 to Stokes et al. Of those claims, Applicants note initially that in order to further the prosecution of the current application, Claims 2, 33, 34, 37, 41, 43 and 48 have been cancelled, thus leaving only Claims 1, 18 and 47 to be addressed with regard to the §102 rejections. Applicants have cancelled the foregoing rejected claims (2, 33, 34, 37, 41, 43 and 48) from the current prosecution without prejudice to their reintroduction into this or a later application.

A. Claim 1

The Examiner indicated that Claim 17, among others, would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. By the above amendment, Applicants have rewritten Claim 1 to incorporate all of the limitations of Claim 17 (which had previously depended directly from Claim 1), and then cancelled Claim 17. With that amendment, Claim 1 no longer stands as a rejected claim but rather an allowable claim.

B. Claim 18

With regard to Claim 18, the Examiner asserts that Stokes et al. discloses a “third layer” which is equivalent to Applicants’ claimed ink receptive layer, and further that Stokes et al. discloses the third layer as being composed of polyethylene imines. Without in any way conceding to the Examiner’s characterization of the Stokes et al. patent or its application to Applicants’ claimed invention, Applicants, in order to further the prosecution of the current application, have amended Claim 18 so as to delete the phrase “polyethylene imines,” and thereby place this claim in condition for allowance.

C. Claim 47

With regard to Claim 47, the Examiner asserts that Stokes et al. discloses a “second layer” which is equivalent to Applicants’ claimed barrier layer, and further that Stokes et al. discloses the second layer as being cured by thermal energy. Without in any way conceding to the Examiner’s characterization of the Stokes et al. patent or its application to Applicants’ claimed invention, Applicants, in order to further the prosecution of the current application, have amended Claim 47 so as to delete the phrase “thermal energy,” and thereby place this claim in condition for allowance.

Therefore, in view of the foregoing amendments and the claims which have been cancelled, Applicants believe the Examiner’s concerns with respect to §102 have been properly addressed.

III. Allowable Subject Matter

As stated above, the Examiner indicated that Claims 3-15, 17, 20-27, 30, 32, 44-46 and 49-51 contained allowable subject matter, but were objected to as being dependent upon a rejected base claim. Applicants note that of the foregoing claims, Claims 3-5 and 17 have been cancelled, thus leaving only Claims 6-15, 20-27, 30, 32, 44-46 and 49-51 to be addressed with regard to allowable subject matter.

A. Claims Dependent Directly Upon Claim 1

Of the foregoing claims, each of Claims 6, 12-15, 21, 23, 25, 27, 30, 44-46 and 49-50 depended directly from Claim 1 as originally filed. Inasmuch as Amended Claim 1 contains allowable subject matter, Claims 6, 12-15, 21, 23, 25, 27, 30, 44-46 and 49-50 are no longer dependent upon a rejected base claim, and their respective dependencies upon Claim 1 have therefore been left in place.

B. Remaining Claims NOT Dependent Directly Upon Claim 1

Similarly, the remaining claims from the aforementioned group (namely, Claims 7-11, 20, 22, 24, 26, 32, and 51) no longer depend from a rejected base claim as a result of the amendment to Claim 1. Specifically, each of claims 7-11 depend from Claim 6, which in turn depends from allowable Amended Claim 1. Similarly, Claims 22, 24 and 26 each depend from a claim (Claims 21, 23 and 25, respectively) that in turn depends from allowable Amended Claim 1. The limitations of rejected (and now cancelled) Claim 2 have been incorporated into Claim 32, which in turn has been amended so as to depend directly from allowable Amended Claim 1. Claim 51 depends from this Amended Claim 32.

Therefore, in view of the foregoing amendments and the claims which have been cancelled, Applicants believe the Examiner's concerns with respect to the allowable subject matter have been properly addressed.

IV. Miscellaneous

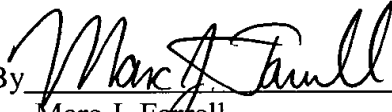
The Examiner noted that in Claims 1 and 52, the preamble of the claims was directed to a composition but the body of the claims was directed to an article. The Examiner advised Applicants to amend the preamble to make it more consistent with the body of the claims and then amend the preamble of Claims 2-51 in view of Claim 1.

The preamble of Claim 1 has been amended to change "a paper medium based composition" to "a coated substrate," a phrase which finds support throughout the specification. See, for example, Page 3, wherein it is recited that "the present invention [includes] a substrate," (line 16), on which there are "various layers of coatings," (line 13). Each and every one of the claims remaining in the prosecution has been amended to include this clarification, and through this amendment the Examiner's concerns with respect thereto are thereby properly addressed.

In view of the amendments and remarks included herein, it is respectfully submitted that the present application is in condition for final allowance and notice to such effect is respectfully requested. If the Examiner believes that additional issues need to be resolved before this application can be passed to issue, the undersigned invites the Examiner to contact him at the telephone number provided below.

Respectfully submitted,

Dated: March 25, 2003

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AMENDMENTS (MARKED-UP VERSION)

1. A [paper medium based composition]coated substrate comprising:

a base substrate;

one or more ink receptive layer(s);

an undercoat layer positioned between said base substrate and said one or more ink receptive layer(s); and

a barrier [coating; and] layer positioned between said undercoat layer and said one or more ink receptive layer(s).

[one or more ink receptive coating (s).]

wherein said one or more ink receptive layer(s) comprises one or more materials selected from the group of hydrophilic polymers consisting of polyvinyl alcohol, gelatin, methylcellulose, hydroxyethylcellulose, propylhydroxycellulose, and polyvinyl pyrrolidone.

6. The [composition] coated substrate of claim 1 wherein [the] said barrier [coating] layer comprises:

one or more monomer(s);

one or more oligomer(s); and

one or more photoinitiator(s).

7. The [composition] coated substrate of claim 6 wherein [the] said one or more monomer(s) comprises one or more of the group consisting of a urethane, an epoxy and an acrylate.

8. The [composition] coated substrate of claim 6 wherein [the] said one or more oligomer(s) comprises one or more of the group consisting of a urethane, an epoxy and an acrylate.

9. The [composition] coated substrate of claim 6 wherein [the] said one or more monomer(s) is between about 1 and about 100 dry percent of [the composition] said barrier layer.

10. The [composition] coated substrate of claim 6 wherein [the] said one or more oligomer(s) is between about 1 and about 100 dry percent of [the composition] said barrier layer.

11. The [composition] coated substrate of claim 6 wherein [the] said one or more photoinitiator(s) [are] is between about 1 and about 20 dry percent of [the composition] said barrier layer.

12. The [composition] coated substrate of claim 1 wherein [the] said barrier [coating] layer is treated with:

a corona discharge.

13. The [composition] coated substrate of claim 1 wherein [the] said barrier [coating] layer is treated with:

flame treatment.

14. The [composition] coated substrate of claim 1 wherein [the] said barrier [coating] layer is treated with:

subbing coating.

15. The [composition] coated substrate of claim 1, [comprising] said one or more ink receptive layer(s) comprising one or more absorbent materials.

18. The [composition] coated substrate of claim 1 wherein said one or more ink receptive layer(s) further comprises one or more cationic polymer material(s) selected from the group consisting of polydadmecs, [polyethylene imines,] polyamides, and polyamines.

19. The [composition] coated substrate of claim [17] 1 wherein [the water loving] said hydrophilic polymer is between about 10 and about 100 dry percent of [the composition] said one or more ink receptive layer(s).

20. The [composition] coated substrate of claim 18 wherein [the] said one or more cationic polymer material(s) is between about 0.1 and about 20 dry percent of [the composition] said one or more ink receptive layer(s).

21. The [composition] coated substrate of claim 1 wherein said one or more ink receptive layer(s) further comprises one or more latex binder(s) selected from the group consisting of styrene butadiene, polyvinyl acetate, acrylic, vinyl-acetate, ethylene-vinyl chloride, and urethane.

22. The [composition] coated substrate of claim 21 wherein [the] said one or more latex binder(s) is between about 0 and about 30 dry percent of [the composition] said one or more ink receptive layer(s).

23. The [composition] coated substrate of claim 1 wherein said one or more ink receptive layer(s) further comprises one or more cross linking agent(s) selected from the group consisting of aziradines and chrom alum.

24. The [composition] coated substrate of claim 23 wherein [the] said one or more cross-linking agent(s) is between about 0.01 and about 20 dry percent of [the composition] said one or more ink receptive layer(s).

25. The [composition] coated substrate of claim 1 wherein said one or more ink receptive layer(s) further comprises one or more inorganic pigment(s) selected from the group consisting of colloidal silica, precipitated silica, fumed silica, gel silica, clay, an alumina, and a calcium carbonate.

26. The [composition] coated substrate of claim 25 wherein [the] said one or more inorganic pigment(s) is between about 0 and about 75 dry percent of [the composition] said one or more ink receptive layer(s).

27. The [composition] coated substrate of claim 1 [comprising] wherein said one or more ink receptive layers(s) further comprises one or more color pigmented and brightener dye.

28. The [composition] coated substrate of claim 1 wherein said one or more ink receptive layers(s) further [comprising] comprises one or more flow agent(s).

29. The [composition] coated substrate of claim 1 wherein said one or more ink receptive layers(s) further [comprising] comprises one or more coating additive(s).

30. The [composition] coated substrate of claim 1 wherein [the] said one or more ink receptive [coating] layers(s) is coated at a coat weight of between about 1 and about 50 dry gsm.

31. The [composition] coated substrate of claim 1 wherein said one or more ink receptive layers(s) further [comprising] comprises a plasticizer.

32. The [composition] coated substrate of claim [2 wherein said] 1, further comprising one or more anti-curl layer(s) applied to a side of [the] said base substrate, said side opposite a side on which [an] said undercoat layer is [located] positioned.

44. The [composition] coated substrate of claim 1 wherein [the] said barrier [coating] layer has a surface energy of about 48 to about 55 dynes.

45. The [composition] coated substrate of claim 1 wherein [the] said barrier [coating] layer has a surface energy of about 30 to about 55 dynes.

46. The [composition] coated substrate of claim 1 wherein [the] said barrier [coating] layer comprises polyethylene.

47. The [composition] coated substrate of claim 1 wherein [the] said barrier [coating] layer is cured via one or more of the group consisting of ultraviolet energy[, and electrom beam energy[, and thermal energy].

49. The [composition] coated substrate of claim 1 wherein [the] said barrier [coating] layer is coated at a coat weight between about 2 to about 9 dry gsm.

50. The [composition] coated substrate of claim 1 wherein [the] said one or more ink receptive [coating(s)] layer(s) is coated at a coat weight between about 1 to about 22 dry gsm.

51. The [composition] coated substrate of claim 32 wherein [the anticurl coating] said one or more anti-curl layer(s) is coated at a coat weight of about 3 to about 15 dry gsm.